

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently Amended) A thermocrosslinkable resin dispersion which comprises

a continuous phase comprising an aqueous medium and

a dispersed phase distributed therein;

said dispersed phase comprising particles (I) of a resin component and particles (II) of a crosslinking agent as separately dispersed from the particles (I),

said resin component comprising, as an essential constituent thereof, a polyolefin resin (a) or a mixture thereof with a vinyl resin (b),

said resin (a) having a number average molecular weight of at least 1,500 and being comprised of a polyolefin polymer (a0) having been modified by the addition of at least one functional group species selected from the group consisting of carboxyl, hydroxyl, mercapto, amino, isocyanato and carbodiimido groups,

said resin (b) having a number average molecular weight of 700 to 40,000 and a glass transition temperature of -65 to 40°C, and

said crosslinking agent having at least two groups reactive with said resin (a);

wherein the crosslinking agent has at least two reactive groups selected from the group consisting of hydroxyl, amino, epoxy and carbodiimido groups.

2. (Currently Amended) The dispersion according to Claim 1, ~~wherein the resin (a) is a modification of a polyolefin resin (a0)~~, said polyolefin resin polymer (a0) having a number average molecular weight of 1,500 to 40,000.

3. (Currently Amended) ~~The dispersion according to Claim 2,~~
A thermocrosslinkable resin dispersion which comprises
a continuous phase comprising an aqueous medium and
a dispersed phase distributed therein;
said dispersed phase comprising particles (I) of a resin component and particles (II) of a
crosslinking agent as separately dispersed from the particles (I),
said resin component comprising, as an essential constituent thereof, a polyolefin resin
(a) or a mixture thereof with a vinyl resin (b),
said resin (a) having a number average molecular weight of at least 1,500 and being
comprised of a polyolefin polymer (a0) having been modified by the addition of at least one
functional group species selected from the group consisting of carboxyl, hydroxyl, mercapto,
amino, isocyanato and carbodiimido groups,
said resin (b) having a number average molecular weight of 700 to 40,000 and a glass
transition temperature of -65 to 40°C, and
said crosslinking agent having at least two groups reactive with said resin (a);
wherein the crosslinking agent has at least two reactive groups selected from the group
consisting of hydroxyl, amino, epoxy and carbodiimido groups;

said polyolefin polymer (a0) having a number average molecular weight of 1,500 to 40,000;

wherein the ~~resin~~ polymer (a0) is a polyolefin thermally degraded to an equivalent degree as if it were heated in an inert gas at between 300 to 450°C for 0.5 to 10 hours.

4. (Currently Amended) The dispersion according to Claim 1, wherein the resin (a) is a carboxy-modified polyolefin resin (a1) comprised of said polyolefin polymer (a0) having been previously modified by the addition of at least one carboxyl functional group.

5. (Currently Amended) The dispersion according to ~~Claim 1~~ Claim 4, wherein the resin (a) is a polyolefin resin modification (a2) ~~derived from a~~ comprising said carboxy-modified polyolefin resin (a1) ~~by at least one further modification by reaction with~~ having been further reacted with one or more modifying agents other than a carboxy-modifying agent for the introduction of at least one functional group species selected from the group consisting of hydroxyl, mercapto, amino, isocyanato and carbodiimido groups.

6. (Previously Presented) The dispersion according to Claim 4, wherein the resin (a1) is a polyolefin modified with an unsaturated dicarboxylic acid or the anhydride thereof.

7. (Previously Presented) The dispersion according to Claim 4, wherein the resin (a1) has an acid value of 5 to 100 mg KOH/g.

8. (Currently Amended) ~~The dispersion according to Claim 5,~~
A thermocrosslinkable resin dispersion which comprises
a continuous phase comprising an aqueous medium and
a dispersed phase distributed therein;
said dispersed phase comprising particles (I) of a resin component and particles (II) of a
crosslinking agent as separately dispersed from the particles (I),
said resin component comprising, as an essential constituent thereof, a polyolefin resin
(a) or a mixture thereof with a vinyl resin (b),
said resin (a) having a number average molecular weight of at least 1,500 and being
comprised of a polyolefin polymer (a0) having been modified by the addition of at least one
functional group species selected from the group consisting of carboxyl, hydroxyl, mercapto,
amino, isocyanato and carbodiimido groups,
said resin (b) having a number average molecular weight of 700 to 40,000 and a glass
transition temperature of -65 to 40°C, and
said crosslinking agent having at least two groups reactive with said resin (a);
wherein the crosslinking agent has at least two reactive groups selected from the group
consisting of hydroxyl, amino, epoxy and carbodiimido groups;
wherein the resin (a) is a polyolefin resin modification (a2) comprising said carboxy-
modified polyolefin resin (a1) having been further reacted with one or more modifying agents
other than a carboxy-modifying agent for the introduction of at least one functional group species

selected from the group consisting of hydroxyl, mercapto, amino, isocyanato and carbodiimido groups;

wherein the resin (a2) comprises at least one modified polyolefin resin selected from the group consisting of hydroxyl-modified polyolefin resins, mercapto-modified polyolefin resins, amino-modified polyolefin resins, isocyanato-modified polyolefin resins and carbodiimido-modified polyolefin resins.

9. (Previously Presented) The dispersion according to Claim 5, wherein the resin (a1) or (a2) comprises at least one polymer moiety with a number average molecular weight of at least 300.

10. (Currently Amended) ~~The dispersion according to Claim 9;~~

A thermocrosslinkable resin dispersion which comprises

a continuous phase comprising an aqueous medium and

a dispersed phase distributed therein;

said dispersed phase comprising particles (I) of a resin component and particles (II) of a crosslinking agent as separately dispersed from the particles (I).

said resin component comprising, as an essential constituent thereof, a polyolefin resin (a) or a mixture thereof with a vinyl resin (b).

said resin (a) having a number average molecular weight of at least 1,500 and being comprised of a polyolefin polymer (a0) having been modified by the addition of at least one

functional group species selected from the group consisting of carboxyl, hydroxyl, mercapto, amino, isocyanato and carbodiimido groups,

said resin (b) having a number average molecular weight of 700 to 40,000 and a glass transition temperature of -65 to 40°C, and

said crosslinking agent having at least two groups reactive with said resin (a);

wherein the crosslinking agent has at least two reactive groups selected from the group consisting of hydroxyl, amino, epoxy and carbodiimido groups;

wherein the resin (a) is a polyolefin resin modification (a2) comprising said carboxy-modified polyolefin resin (a1) having been further reacted with one or more modifying agents other than a carboxy-modifying agent for the introduction of at least one functional group species selected from the group consisting of hydroxyl, mercapto, amino, isocyanato and carbodiimido groups;

wherein the resin (a1) or (a2) comprises at least one polymer moiety with a number average molecular weight of at least 300; and

wherein the polymer comprises at least one species selected from the group consisting of polyethers, polyesters, polyamides and polyurethanes.

11. (Previously Presented) The dispersion according to Claim 9, wherein said polymer has at least one carboxy-reactive group selected from the group consisting of hydroxyl, mercapto, amino, isocyanato and carbodiimido groups.

12. (Previously Presented) The dispersion according to Claim 9, wherein said polymer has a HLB value of at least 6.

13. (Canceled)

14. (Previously Presented) The dispersion according to Claim 1, wherein said resin component is a mixture of the resins (a) and (b).

15. (Original) The dispersion according to Claim 14, wherein said mixture contains 1 to 50% by weight of the resin (b).

16. (Previously Presented) The dispersion according to Claim 14, wherein the resin (b) is a polymer derived from at least one ethylenically unsaturated monomer selected from the group consisting of unsaturated hydrocarbons, alkyl (meth)acrylates, carboxyl group-containing unsaturated monomers and salts thereof.

17. (Previously Presented) The dispersion according to Claim 1, wherein said resin component has a melting point or thermosoftening point of -45 to 120 °C.

18. (Previously Presented) The dispersion according to Claim 1, which further comprises 1 to 50% by weight, based on the weight of the resin (a), of an organic solvent.

19. (Original) The dispersion according to Claim 18, wherein said solvent comprises one or more solvents selected from the group consisting of hydrocarbons, alcohols, ethers, ketones, esters and amides.

20. (Previously Presented) The dispersion according to Claim 1, which further comprises at least one additive selected from the group consisting of colorants, dispersants, catalysts, fillers, flattening agents, flame retardants, antioxidants, ultraviolet absorbers and hydrolysis inhibitors.

21. (Previously Presented) The dispersion according to Claim 1, wherein said particles (I) and (II) are contained therein in a weight ratio of 99/1 to 50/50 and at a total concentration of 5 to 60% based on the weight of the dispersion.

22. (Previously Presented) The dispersion according to Claim 1, which comprises, as essential constituents, an aqueous resin component dispersion (A) comprising said resin (a) or a mixture thereof with said resin (b), if necessary together with an organic solvent, and an aqueous dispersion (B) of said crosslinking agent.

23. (Canceled)

24. (Previously Presented) A method of coating which comprises applying the dispersion according to Claim 1 to polyolefin plastics products.

25. (Original) The method according to Claim 24, wherein a topcoating composition is or an intermediate coating composition and a topcoating composition are further applied onto the surface of the coat film formed from said dispersion after drying or baking thereof or by the wet-on-wet technique.

26. (Previously Presented) The method according to Claim 24, wherein said dispersion applied onto said products is heated to a temperature of 60 to 180°C for crosslinking of said resin component with said crosslinking agent.

27. (Previously Presented) A coated polyolefin plastics product obtained by the method according to Claim 24.

28. (Previously Presented) A method for improving coating property of polyolefin plastics products, comprising the step of applying a primer comprising the dispersion according to Claim 1 to polyolefin plastics products.